FIG.1

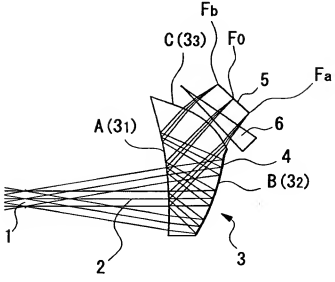


FIG.3

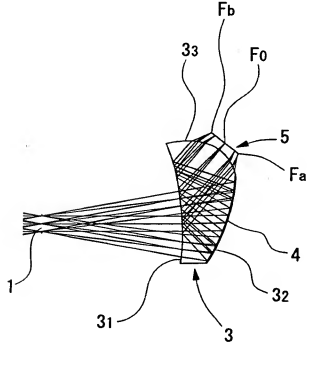


FIG.2A

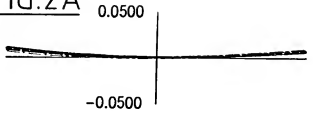


FIG.2B

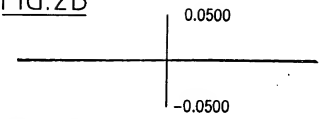


FIG.2C

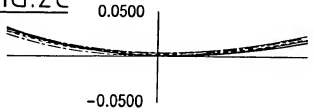


FIG.2D

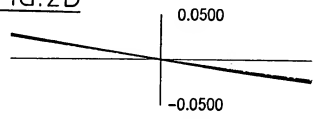


FIG.2E

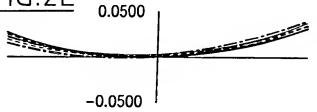


FIG.2F

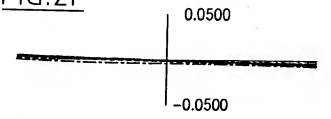


FIG.2G

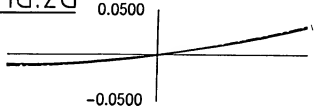


FIG.2H

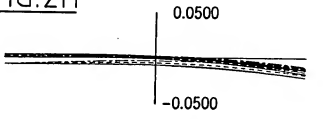


FIG.2I

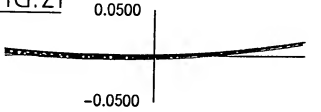


FIG.2J

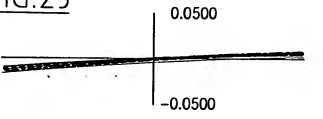


FIG.2K

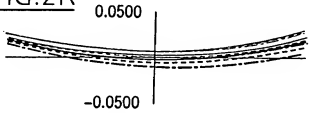
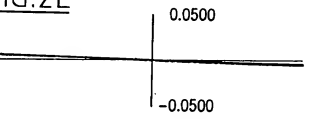


FIG.2L



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610.0 NM
540.0 NM
520.0 NM
500.0 NM
490.0 NM
470.0 NM
450.0 NM

FIG.4A

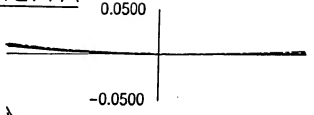


FIG.4B

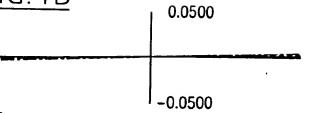


FIG.4C

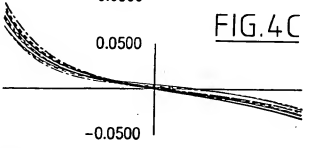


FIG.4D

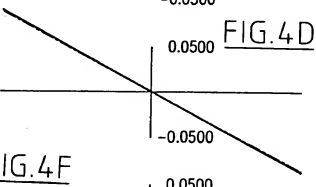


FIG.4E

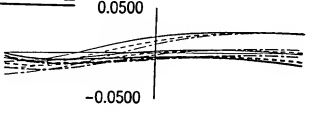


FIG.4F

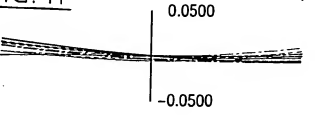


FIG.4G

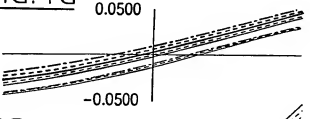


FIG.4H

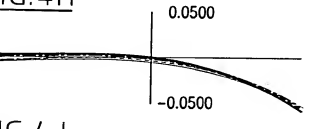


FIG.4I

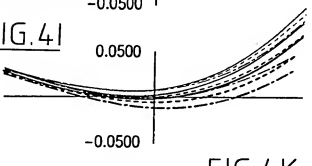


FIG.4J

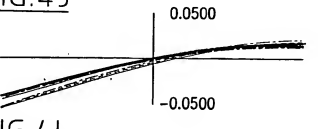


FIG.4K

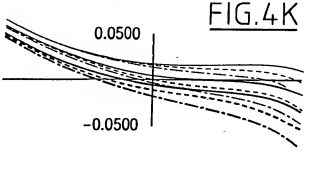
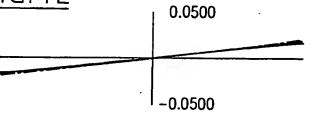


FIG.4L



650.0 NM
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520.0 NM
500.0 NM
490.0 NM
470.0 NM
450.0 NM

FIG.5

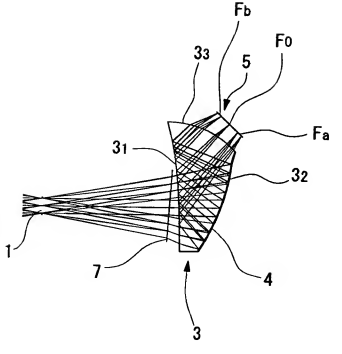


FIG.7

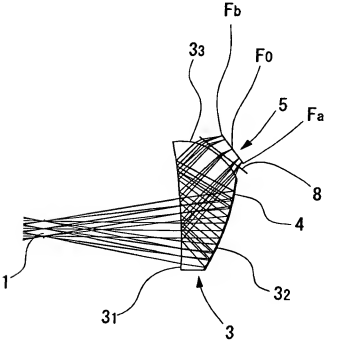


FIG.6A

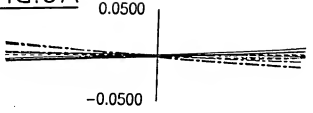


FIG.6B

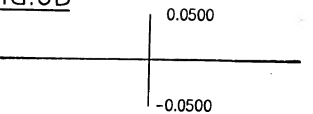


FIG.6C

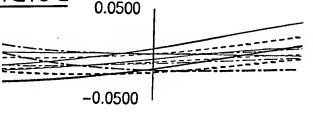


FIG.6D

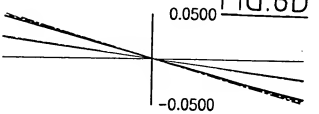


FIG.6E

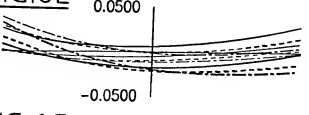


FIG.6F

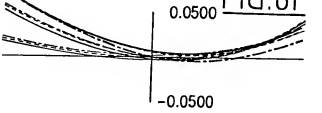


FIG.6G

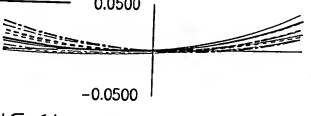


FIG.6H

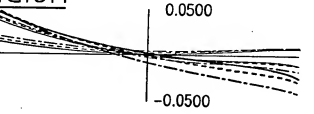


FIG.6I

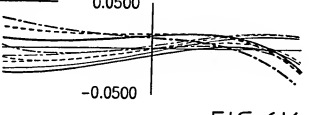


FIG.6J

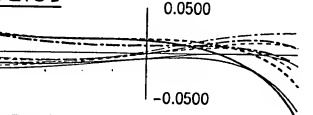


FIG.6K

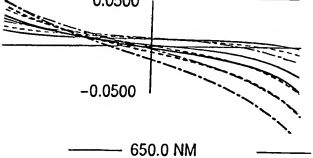
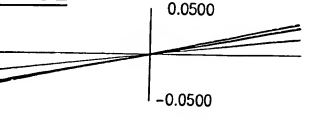


FIG.6L



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520.0 NM
500.0 NM
490.0 NM
470.0 NM
450.0 NM

FIG.8A

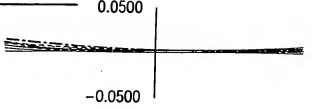


FIG.8B

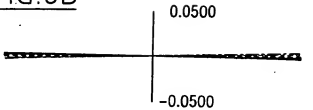


FIG.8C

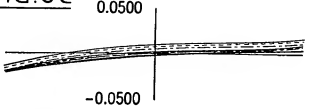


FIG.8D

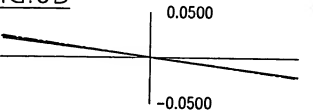


FIG.8E

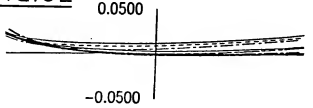


FIG.8F

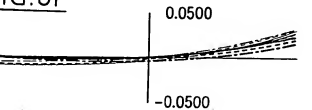


FIG.8G

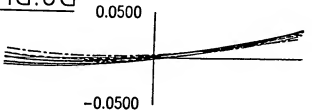


FIG.8H

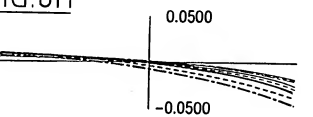


FIG.8I

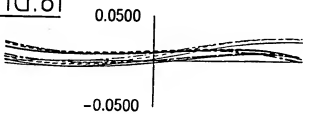


FIG.8J

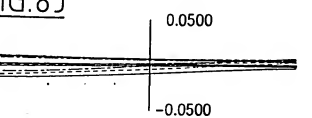


FIG.8K

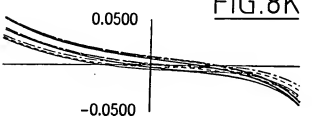
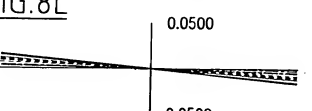


FIG.8L



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540.0 NM
520.0 NM
500.0 NM
490.0 NM
470.0 NM
450.0 NM

FIG.9 PRIOR ART

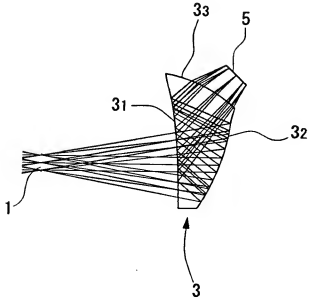


FIG.11 PRIOR ART

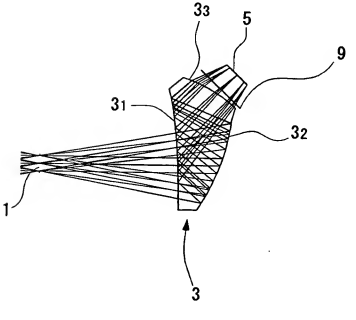


FIG.10A

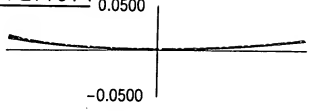


FIG.10B

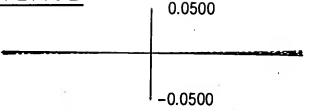


FIG.10C

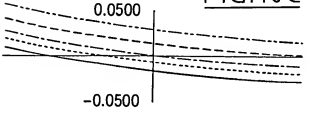


FIG.10D

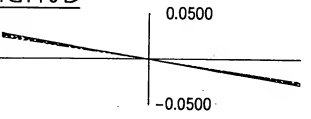


FIG.10E

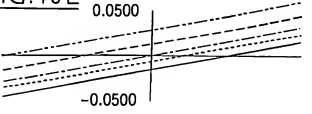


FIG.10F

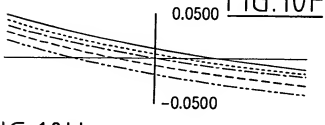


FIG.10G

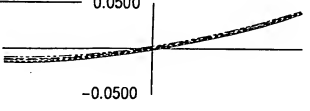


FIG.10H

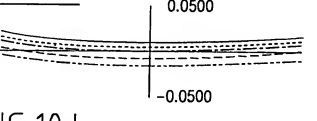


FIG.10I

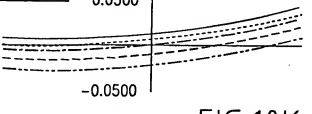


FIG.10J

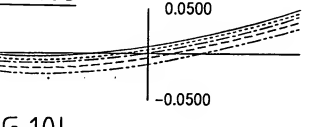


FIG.10K

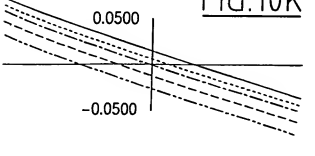
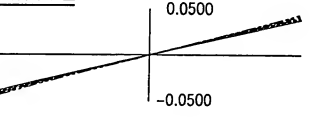


FIG.10L



656.0 NM
587.0 NM
546.0 NM
486.0 NM
435.0 NM

FIG.12A

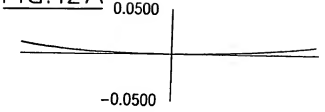


FIG.12B

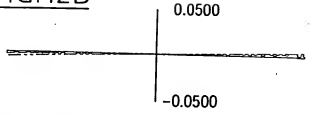


FIG.12C

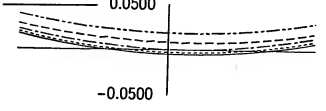


FIG.12D

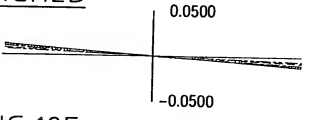


FIG.12E

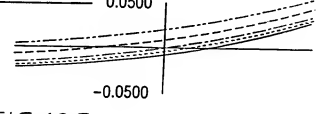


FIG.12F

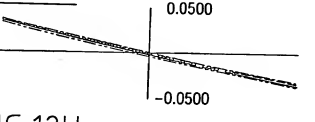


FIG.12G

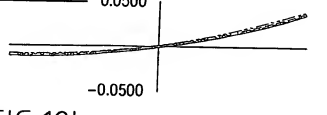


FIG.12H

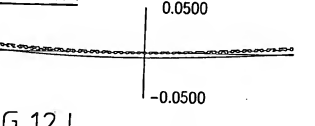


FIG.12I

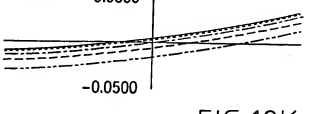


FIG.12J

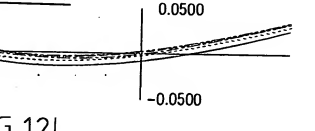


FIG.12K

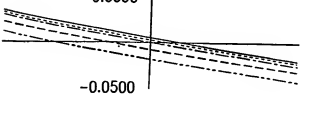
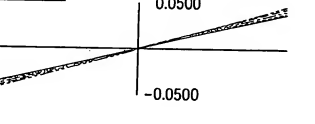


FIG.12L



656.0 NM
587.0 NM
546.0 NM
486.0 NM
435.0 NM

FIG.13

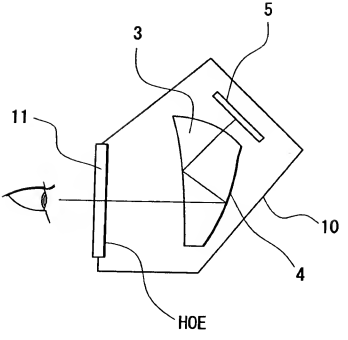


FIG.14

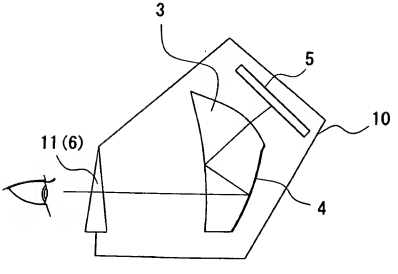


FIG.15A

FIG.15B

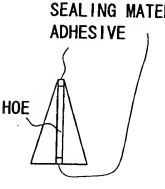


FIG.16

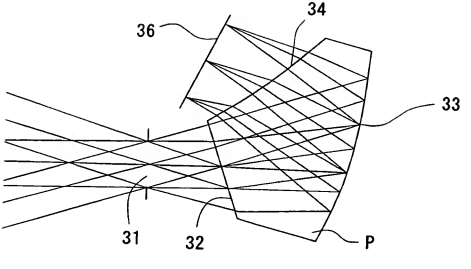


FIG.17

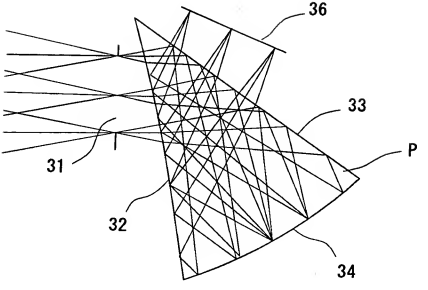


FIG.18

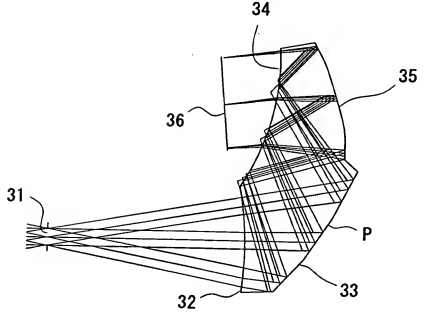


FIG.19

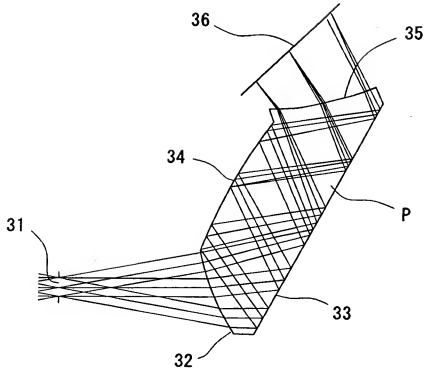


FIG.20

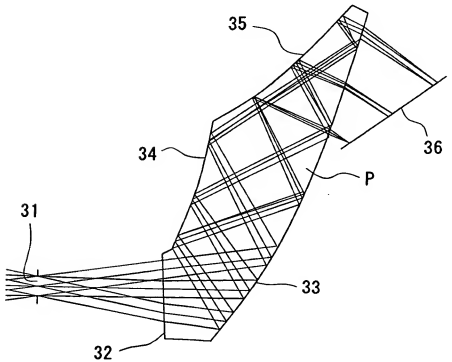


FIG.21

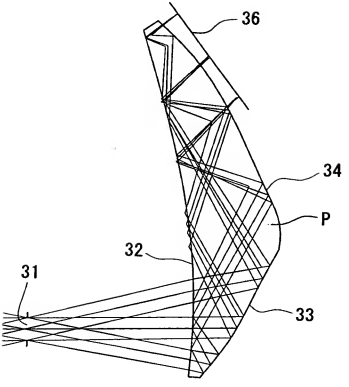


FIG.22

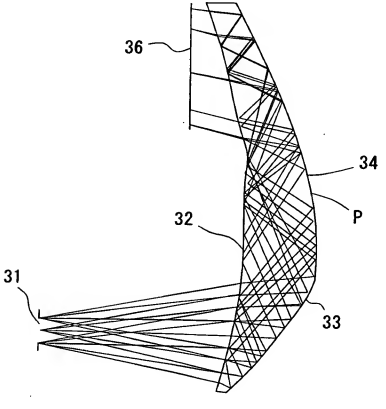


FIG.23

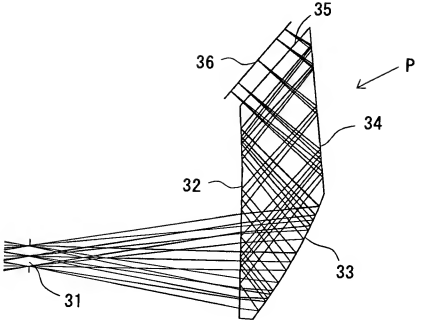


FIG.24

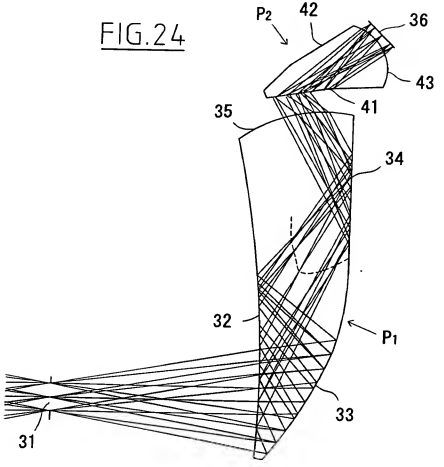


FIG.25

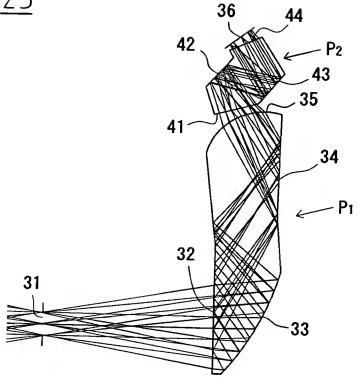


FIG.26

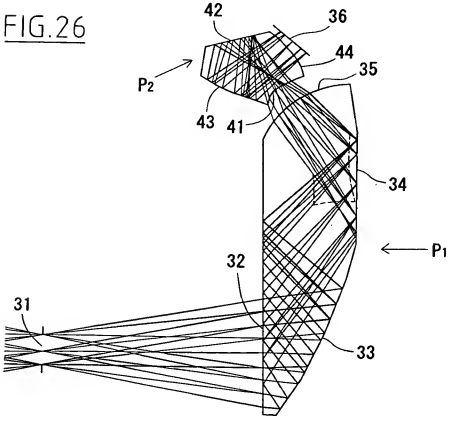


FIG.27

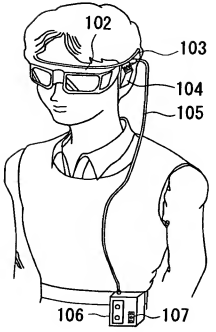


FIG.28

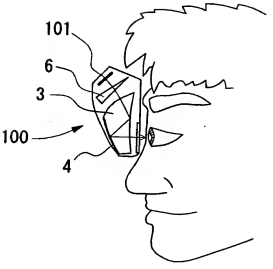


FIG.29

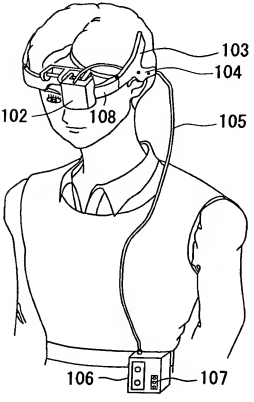


FIG.30

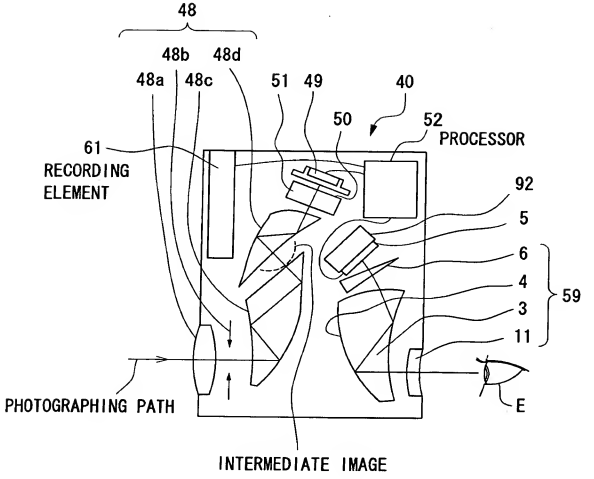

48
48b
48d
48a
48c
51
49
40
50
52
PROCESSOR
61
RECORDING
ELEMENT
92
5
6
4
3
11
59
PHOTOGRAPHING PATH
E
INTERMEDIATE IMAGE

FIG.31A

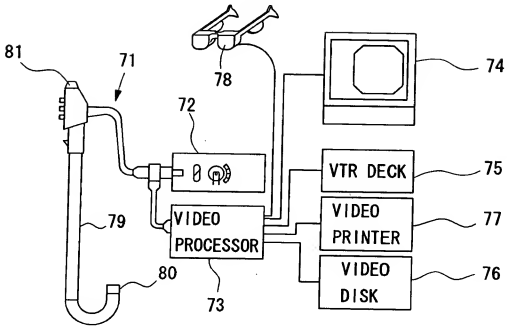


FIG.31B

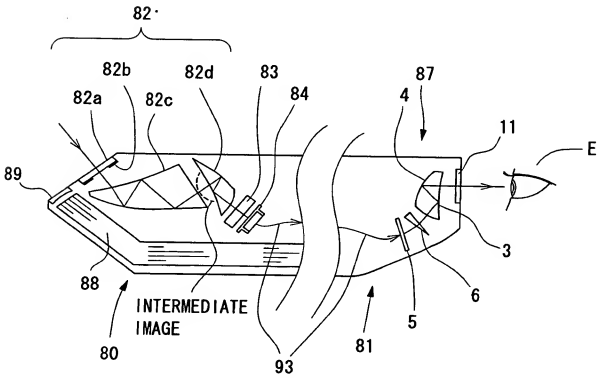


FIG.32

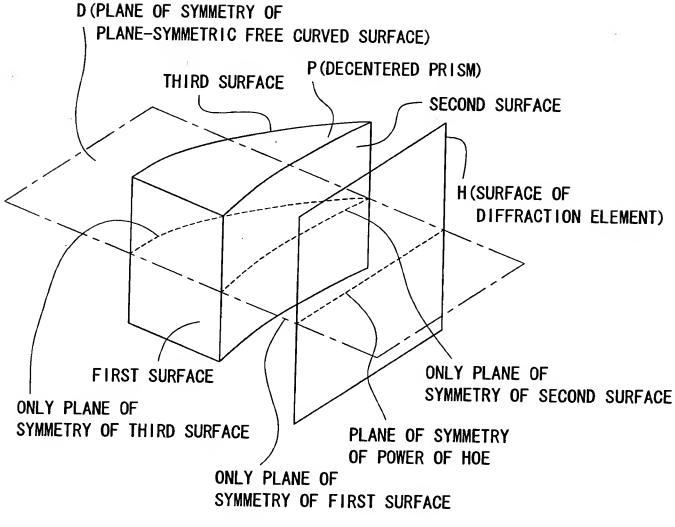

D(PLANE OF SYMMETRY OF
PLANE-SYMMETRIC FREE CURVED SURFACE)
THIRD SURFACE
P(DECENTERED PRISM)
SECOND SURFACE
H(SURFACE OF
DIFFRACTION ELEMENT)
FIRST SURFACE
ONLY PLANE OF
SYMMETRY OF THIRD SURFACE
ONLY PLANE OF
SYMMETRY OF SECOND SURFACE
PLANE OF SYMMETRY
OF POWER OF HOE
ONLY PLANE OF
SYMMETRY OF FIRST SURFACE

FIG.33

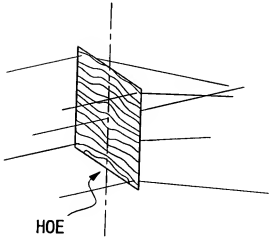


FIG.34

FREE CURVED SURFACE

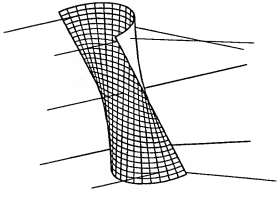


FIG.35A

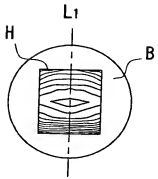


FIG.35B

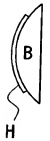
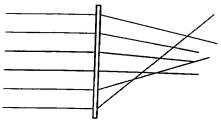
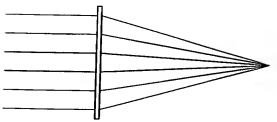


FIG.35C



ASYMMETRIC WITH RESPECT TO ANY HORIZONTAL PLANE

FIG.35D



SYMMETRIC WITH RESPECT TO VERTICAL PLANE

FIG.36

(EXAMPLE) WHERE MEDIUM IS AIR WITH n=1:

$\Phi_0{}^{2P} = -r_2 - r_1 < 0$

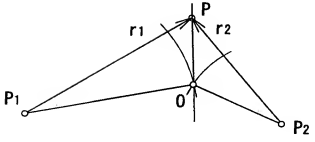


FIG.37